

Dr. Aurelie Gouel

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Contact information

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Education

- 2017- Visiting Fellow in the Biostatistic Research Branch, Clinical Research Department, National Institute of Allergy and Infectious Diseases, National Institute of Health, Bethesda, USA.
- 2012-2016 Ph.D. in immunology, Pasteur Institut, Paris, France.
ADVISORS: Dr. Pierre BRUHNS (Pasteur Institut) and Pr. Dan LONGROIS (Bichat Hospital).
TITLE: New diagnostic approaches for anaphylaxis dependent on neuromuscular blocking agents.
- 2012-2015 Fellowship in anesthesiology and critical care medicine (cardiac surgery and surgical critical care) at the Bichat Hospital, Paris, France.
- 2006-2012 Residency training in anesthesiology and critical care medicine, Lyon University, France.
- 2000-2006 First and second part of clinical medical studies, Paris VI University, France.

Licences – Certifications

- 2011 Master of Sciences: « Physiology in extreme conditions », Lyon University, France.
- 2010 Diploma of Medical doctor. Specialty: Anesthesiology and intensive care medicine. Mention: very honorable with honors. Lyon University, France.
- 2008 Specialization diploma: « Hemodynamics explorations by ultrasound in intensive care, anesthesiology and emergency care », Lyon University, France.
- 2007 Specialization diploma: « Infectious intensive care », Paris VII University, France.
- 2006 Specialization diploma: « Neuroanatomy », Paris VI University, France.
- 2002 Specialization diploma: « Physiology and Biology of integrated systems », Paris VI University.

Work experience

- 2012-15 Senior position in the anesthesiology and critical care department at the Bichat hospital, Paris, France: cardiac surgery and surgical critical care unit.

Grants

- 2016 Laureate of the grant of the “Contrat de recherche SFAR”: “T cells in the etiologic diagnosis of anaphylactic shock induced by neuromuscular blocking drugs” (10,000€).
- 2015 “Visiting Research Fellow”: one-year funding provided by AP-HP for the last year of PhD.
- 2012 Laureate of the grant of the “Comité d’Interface INSERM – SFAR – SRLF” for the PhD project (15,000€).

Publications

1. [Jonsson F, de Chaisemartin L], [Granger V, Gouel-Chéron A], Gillis CM, Dib F, Nicaise-Roland P, Ganneau C, Guimmpain MT, Aubier M, Bay S, Tuach F, Neukirch C, [Longrois D, Chollet-Martin S, Bruhns P], and the NASA study group. Evidence of an IgG-induced neutrophil activation pathway during human drug-induced anaphylaxis. Under revision in *Science Translationnal Medicine*. (co-second auteur)
2. Provenchère S, Guglielminotti J, Gouel-Chéron A, Bresson E, Bouleti C, Iung B, Montravers P, Dehoux M, Longrois D. Postoperative cardiac troponin I thresholds for one-year cardiac mortality after adult cardiac surgery and potential medical decisions. Under revision in *British Journal of Anesthesia*.
3. Beutier H, Hechler B, Godon O, Gillis CM, Wang Yu, de Chaisemartin L, Gouel-Chéron A, Macdonald LE, Murphy AJ, Chollet-Martin S, Longrois D, Gachet C, Bruhns P, Jönsson F, and the NASA study group. CD32A-expressing platelets determine the severity of experimental anaphylaxis. *Science immunology*. 2018 Apr 13; 3(22).
4. Gouel-Chéron A, de Chaisemartin L, Jönsson F, Nicaise-Roland P, Granger V, Sabahov A, Guinnepain M-T, Chollet-Martin S, Bruhns P, Neukirch C, Longrois D and the NASA study group. A low end-tidal CO₂ value is a real-time severity marker of intra-anesthetic acute hypersensitivity reactions. *British Journal of Anesthesia*. 2017. 119(5):908-917.
5. Dupin M, Fortin T, Larue-Triolet A, Surault I, Beaulieu C, Gouel-Chéron A, Allaouchiche B, Asehnoune K, Roquilly A, Venet F, Monneret G, Roitsch C, Pachot A, Charrier JP, Pons S. Impact of serum and plasma matrices on the titration of human inflammatory biomarkers using analytically validated SRM assays. *Journal of Proteome Research*. 2016. 15(8), 2366-2378.
6. Gouel-Chéron A, Harpan A, Mertes PM, Longrois D. Management of anaphylactic shock in the operating room. *La Presse Med*. 2016. 45(9):774-83.
7. Garnier M, Mailleux AA, Besnard V, Leçon V, Neuville M, Gouel A, Crestani B, Dehoux M, Quesnel C. Serum amyloid P contained in alveolar fluid from patients with acute respiratory distress syndrome mediates the inhibition of monocyte differentiation into fibrocyte. *Crit Care Med*. 2016. 44(7):e563-73.
8. Gouel-Chéron A, Allaouchiche B, Floccard B, Rimmelé T, Monneret G. Early daily mHLA-DR monitoring predicts forthcoming sepsis in severe trauma patients. *Intensive Care Med*. 2015 Dec;41(12):2229-30.
9. Gouel-Chéron A, Neukirch C, Aubier B, Montravers P, Nicaise P, Chollet-Martin S, Mertes PM, Aubier M, Longrois D. Anaphylactic bronchospasm during general anesthesia is not related to asthma. *Allergy*. 2015 Apr;70(4):453-6.
10. Gillis C, Gouel-Chéron A, Jönsson F, Bruhns P. Contribution of human FcγRs to disease with Evidence from Human Polymorphisms and Transgenic Animal Studies. *Frontiers in Immunology*. 2014 May 30;5:254 (co-first author)
11. Blaise B, Gouel-Chéron A, Floccard B, Monneret G, Plaisant F, Chassard D, Javouhey E, Claris O, Allaouchiche B. Nuclear Magnetic Resonance based metabolic phenotyping for patient evaluations in operating rooms and intensive care units. *Ann Fr Anesth Reanim*. 2014 Jan 20. S0750-7658(13)01264-1
12. Blaise B, Gouel-Chéron A, Floccard B, Monneret G, Allaouchiche B. Metabolic phenotyping of traumatized patients reveals a susceptibility to sepsis: a proof-of-concept study. *Analytical Chemistry*. 2013 Nov 19;85(22):10850-5. (co-first author)

13. Guignant C, Venet F, Planel S, Demaret J, Gouel-Chéron A, Nougier C, Friggeri A, Allaouchiche B, Lepape A, Monneret M. Increased MERTK expression on circulating innate immune cells in septic shock patients. *Intensive Care Med.* 2013;39(9):1556-1564.
14. Gouel-Chéron A, Dupin M, Chanteperdix M, Chaillol I, Venet F, Pachot A, Monneret G, Floccard B, Allaouchiche B. Concomitant assessment of PSP and NT-proCNP as predictive marker of sepsis in severe trauma patients under mechanical ventilation. *Critical Care.* 2013;17(3):434.
15. Gouel-Chéron A, Venet F, Allaouchiche B, Monneret G. CD4+ T lymphocyte alterations in trauma patients. *Critical Care.* 2012 Jun 26;16(3):432.
16. Gouel-Chéron A, Monneret G, Guignant C, Davin F, Floccard B, Allaouchiche B. Early interleukin-6 concentration and slope of expression of monocyte human leukocyte antigen-DR: a powerful association to predict the development of sepsis after major trauma. *PLoS-ONE* 2012;7(3):e33095.
17. David JS, Levrat A, Inaba K, Macabeo C, Rugeri L, Fontaine O, Cheron A, Piriou V. Utility of a Point of Care Device for Rapid Determination of Prothrombin Time in Trauma Patients: A Preliminary Study. *J Trauma Acute Care Surg.* 2012 Mar;72(3):703-707.
18. Guignant C, Lepape A, Huang X, Kherouf H, Denis L, Poitevin F, Malcus C, Cheron A, Allaouchiche B, Gueyffier F, Ayala A, Monneret G, Venet F. Programmed Death-1 levels correlate with increased mortality, nosocomial infection and immune dysfunctions in septic shock patients. *Critical Care.* 2011 Mar 21;15(2):R99.
19. Cheron A, Floccard B, Allaouchiche B, Guignant C, Poitevin F, Malcus C, Crozon J, Faure A, Guillaume C, Marcotte G, Vulliez A, Monneuse O, Monneret G. Lack of recovery in monocyte human leukocyte antigen-DR expression is independently associated with the development of sepsis after major trauma. *Critical Care.* 2010;14(6):R208.
20. Cheron A, Monneret G, Landelle C, Floccard B, Allaouchiche B. Diminution de l'expression monocytaire de HLA-DR et risque d'infection hospitalière. *Ann Fr Anesth Reanim.* 2010 May;29(5): 368-76.
21. Challan-Berval A, Cheron A, Floccard B, Lienhart A-S, Allaouchiche B. Acute pancreatitis and bradycardia. *Ann Fr Anesth Reanim.* 2010 Feb;29(2):159-61.
22. Mottard N, David J-S, Mewton N, Abdellaoui M, Cheron A, Macabeo C, Bonnefoy E, Piriou V. Peroperative myocardial infarction, which treatment at the acute period? *Ann Fr Anesth Reanim.* 2009 Jul-Aug;28(7-8):692-6.

Oral presentations during conferences

1. Laidlaw E, Gouel-Chéron A, Kuriakose S, Pau A, Rupert A, Nason M, Sheikh V, Mican J, Sereti I. Weight Gain After ARV Initiation Correlates with Increased Inflammatory Biomarkers and Protease Inhibitor Usage. 22nd International AIDS Conference 2018, Amsterdam, The Netherlands.
2. de Chaisemartin L, Jönsson F, Granger V, Gouel-Chéron A, Gillis C, Dib F, Nicaise-Roland P, Ganneau C, Guinnepain MT, Aubier M, Bay S, Neukirch C, Tubach F, Longrois D, Chollet-Martin S, Bruhns P. Présence d'une voie d'activation des neutrophiles IgG-induite dans l'anaphylaxie médicamenteuse. Congrès Français d'Allergologie 2018, Paris. *Rev Fr Allergol* 2018; 58:264.
3. de Chaisemartin L, Baillard S, Sahli F, Petit S, Gigant N, Gouel-Chéron A, Noël B, Peltier S, Neukirch C, Bechara R, Bruhns P, Jönsson F, Longrois D, Tubach F, Pallardy M, Joseph D, Chollet-Martin S. Quantification des lymphocytes T mémoires spécifiques des curares dans le diagnostic de l'anaphylaxie peropératoire. Congrès Français d'Allergologie 2018, Paris. *Rev Fr Allergol* 2018; 58:264.

4. Jönsson F & de Chaisemartin L, Granger V, Gillis C, Gouel-Chéron A, Neukirch C, Dib F, Nicaise-Roland P, Longrois D, Tubach F, Bruhns P, Chollet-Martin S, the NASA study group. Neutrophil activation in systemic anaphylaxis: results from the multicentric NASA study. Presented in :
 - a. Phagocyte workshop 2016, Paris. *European journal of clinical investigation* 46, 78-79.
 - b. Congrès de la Société Allemande d'Immunologie 2016, Hamburg
 - c. EAACI 2016, Vienne. *Allergy* 71, 41-42.
 - d. DHM 2016, Malaga
 - e. SFAR 2016, Paris
 - f. "Inflammation, Immunity and Cancer: Neutrophils and Other Leukocytes", 2016, Vérone
5. Gouel-Chéron A, de Chaisemartin L, Jönsson F, Granger V, Gillis C, Neukirch C, Dib F, Nicaise-Roland P, Tubach F, Bruhns P, Chollet-Martin S, Longrois D, & the NASA study group. Une valeur basse du CO₂ télé-expiratoire est un marqueur de gravité des complications anaphylactiques per-anesthésiques : résultats de l'étude NASA. SFAR 2016, Paris.
6. Gouel-Chéron A, Gillis C, Jönsson F, de Chaisemartin L, Neukirch C, Montravers P, Cogné M, Ganneau C, Bay S, Venemalm L, Chollet-Martin S, Longrois D, Bruhns P et NASA Study Group. Analyse des IgG anti-Rocuronium après une suspicion de choc anaphylactique aux curares : résultats préliminaires de l'étude NASA/IPAAQ. SFAR 2015, Paris. *Anesthésie & Réanimation* 2015 Sept ;1 (S1) :A64–A65.
7. Provenchere S, Gouel-Chéron A, Desplanque L, Bouleti C, Guglielminotti J, Montravers P, Longrois D. High-sensitive troponin thresholds values associated with mortality risk after cardiac surgery. Congrès ESA 2015, Berlin.
8. Blaise B, Gouel-Chéron A, Floccard B, Rimmelé T, Monneret G. Le phénotypage métabolique identifie une susceptibilité au sepsis chez le patient polytraumatisé. SFAR 2014. Sélectionné pour le prix du Laryngoscope. *Ann Fr Anesth Reanim.* 2014 Sept;33 (S2):A20.
9. Allaouchiche B, Chéron A, Davidson J. Marqueurs prédictifs de probabilité de sepsis chez des polytraumatisés graves. SFAR 2014. *Ann Fr Anesth Reanim.* 2014 Sept;33 (S2):A20.
10. Gouel-Chéron A, Bataille A, Provenchere S, Ibrahim H, Montravers P, Longrois D. La transfusion de concentrés globulaires rouges n'est pas associée à la mortalité après chirurgie cardiaque lorsque le saignement post-opératoire est pris en compte. Presented in:
 - a. Congrès SFCTCV 2014, Tours. JCTCV ; 18 (Suppl. 1) – p54.
 - b. SFAR 2013. *Ann Fr Anesth Reanim.* 2013 Sept;32:A138.
11. Gouel-Chéron A, Bataille A, Dehoux M, Ibrahim H, Depoix JP, Montravers P, Longrois D, Provenchere S. Valeurs seuils de troponine conventionnelle et ultrasensible associées à une spécificité de 90 % du risque de mortalité après chirurgie cardiaque. Presented in:
 - a. Congrès SFCTCV 2014, Tours. JCTCV ; 18 (Suppl. 1) – p8.
 - b. SFAR 2013. *Ann Fr Anesth Reanim.* 2013 Sept;32:A190.
12. Bataille A, Gouel-Chéron A, Depoix JP, Ibrahim H, Montravers P, Longrois D, Provenchere S. Quels outils pour l'évaluation du risque chez les patients de plus de 80 ans en chirurgie cardiaque?
 - a. Congrès SFCTCV 2014, Tours. JCTCV ; 18 (Suppl. 1) - p19
 - b. SFAR 2013. *Ann Fr Anesth Reanim.* 2013 Sept;32:A283.
13. Gouel-Chéron A, Dupin M, Floccard B, Esteve L, Venet F, Monneret G, Pachot A, Allaouchiche B. Recherche de biomarqueurs précoce pour la prédition du sepsis chez les polytraumatisés : approche par Luminex. SFAR 2013. *Ann Fr Anesth Reanim.* 2013 Sept;32:A192.
14. Chollet-Martin S, Nicaise-Roland P, de Chaisemartin L, Gouel-Chéron A, Neukirch C, Longrois D, Bruhns P, Aubier M and Groupe NASA. Place du dosage des IgG anti-ammonium quaternaire dans le choc anaphylactique aux curares. SFAR 2013. *Ann Fr Anesth Reanim.* 2013 Sept;32:A147

15. Dupin M, Chanteperrin M., Chaillol I., Venet F., Monneret G., Pachot A., Allaouchiche B., Gouel-Chéron A. PSP/reg and NT-proCNP to predict the occurrence of ICU-acquired sepsis in severe trauma patients: results of a pilot study. International Sepsis Conference, 2012, Paris. *Critical Care* 2012;16(Suppl 3):P96.
16. Cheron A, Floccard B, Guignant C, Monneret G, Allaouchiche B. L'association du dosage précoce de l'interleukine-6 et de la persistance de la diminution de l'expression monocytaire de HLA-DR est hautement prédictive de la survenue d'infections chez les polytraumatisés. SFAR 2011, Paris. Sélectionné pour le prix du Laryngoscope. *Ann Fr Anesth Reanim*. 2011 Sept.
17. Cheron A, Floccard B, Guignant C, Monneret G, Allaouchiche B. La diminution de l'expression monocytaire de HLA-DR est associée à la survenue d'infections chez les polytraumatisés.
 - a. SFAR 2009, Paris. *Ann Fr Anesth Reanim*. 2009 Sept;28,HS1:58.
 - b. American Society of Anesthesiologists Annual Meeting – New Orleans, 2009.
 - c. 16ème Congrès ICAR 2009, Lyon.
18. Fontaine O, Cheron A, Macabeo C, Clévenot D, Rugeri L, Levrat A, David J-S. Intérêt de la mesure rapide de l'INR au déchocage. SFAR 2009, Paris. *Ann Fr Anesth Reanim*. 2009 Sept;28,HS1:158.
19. Puel C, Macabeo C, Cheron A, Laplace M-C, Gueugniaud P-Y, Piriou V. Elévation de la troponinémie en chirurgie de fracture ostéoporotique de la hanche ou de l'épaule. SFAR 2008, Paris. *Ann Fr Anesth Reanim*. 2008 Sept;27,HS1:71.

Book chapters

1. Longrois D, Harpan A, Gouel-Chéron A. Saignement massif : définitions et épidémiologie. JEPU (2015).
2. Gouel-Chéron A, Montravers P. Sepsis models in animals: advantages and limitations. "Encyclopedia of inflammatory diseases", Springer (2012).
3. Bruhns P, Gillis C, Gouel-Chéron A. Anaphylaxis (Immediate hypersensitivity): from old to new mechanisms. "Encyclopedia of inflammatory diseases", Springer (2012).
4. Longrois D, Bataille S, Gouel-Chéron A. Which specificities in cardiac surgery? "Management of severe bleeding", Pr. C-M Samama and the GHIP.
5. Gouel A, Lepape A, Allaouchiche B. The mHLA-DR system in the Critically Ill. Chapitre dans "Annual Update in Intensive Care and Emergency Medicine 2012" (Elsevier). Edited by JL Vincent.

Referee reports for scientific journals

PloSOne. Clinical trials. Clinical Chemistry and Laboratory Medicine.

Regular attendance to anesthesia and intensive care congress

- SFAR: 2007, 2008, 2009, 2013, 2015, 2016, 2017 (France)
- MAPAR: 2008 (France)
- ICAR: 2006, 2009 (France)
- ASA: 2009 (USA)
- SRLF: 2011 (France)

Teaching

- 2017: Immunologic lessons for the BRB staff, NIAID, NIH, Bethesda, USA.
- 2014 and 2015: “Glycopeptides” class for French residents in anesthesiology and intensive care.
- 2014: Seminar on Emergency care for 2nd year medical students.
- 2014: Seminar on “Obstetrical Intensive Care” in Vietnam (four days).
- 2014: Class on anaphylactic shock for pharmacist students.
- 2012 and 2013: Member of the jury for final exams (1st and 6rd year of medical school).
- 2012-2013: Clinical semiology to first year medical students (22 half-days).
- 2012: Training in emergency situations during a seminar of medical simulation for 1st and 3rd year residents in anesthesiology and intensive care medicine.

Additional trainings

- 2018 « Management bootcamp », NIH, Bethesda, USA.
- 2017 « Scientists Teaching Science Pedagogy Course », NIH, Bethesda, USA.
- 2017 « Advanced English conversation », FAES, NIH, Bethesda, USA.
- 2017 « Ethics in Research Training » workshop, NIH, Bethesda, USA.
- 2017 « Workplace Dynamics » workshop, NIH, Bethesda, USA.
- 2017 « English Communication for Visiting Scientists » workshop, NIH, Bethesda, USA.
- 2013 Summer-school in advanced immunology, European network of immunology institutes, Porto Conte, Sardaigne, Italia.
- 2012 Multi-disciplinary seminar « ECMO/ECLS », Lyon, France.
- 2011 Symposium for medical reactions and management optimizations for crisis situations during anesthesia and in ICU patients, based on simulation, Lyon, France.

Licence:

Prediction of the Risk of Developing a Disseminated Infection for Patients Admitted to an Intensive Care Unit. Allaouchiche B, Asehnoune K, Dupin M, Fortin T, Gouel-Cheron A, Larue-Triolet A, Monneret G, Pachot A, Pons S, Roquilly A, Venet F. Number : 16729013.9 – 1408.